

Application No.: 10/003,248

Docket No.: 21065-00160-US

REMARKS

The Office Action and prior art relied upon have been carefully considered. In an effort to expedite the prosecution of the present application, claims 1-6 have been amended as required by the Examiner, claims 7-11 have been cancelled, and a new set of claims, namely 12-22, are submitted for the Examiner's consideration. Claims 12-22 clearly set forth the invention in accordance with U.S. practice and in a manner defining the invention over the cited prior art.

On page 2, the Examiner indicates that there is a listing of references as opposed to a proper Information Disclosure Statement. Applicant is at a loss since an Information Disclosure Statement was filed and initialed by the Examiner.

With respect to the drawings, applicant wishes to point out that all of the parts mentioned are in fact shown in the drawings. The free surface of the first part 5 is shown in Fig. 1, namely the upper exposed surface of part 5. Flange 12 is shown in Figs. 2-7. Claim 1 recites that the flange 12 bears against the free surface through the spring thrust element 18. The balls 16 are shown in Figs. 2-7 and the snap ring 17 is clearly shown in Figs. 2-7 as well. The unobstructed surface 82 is the lower illustrated surface of part 9 and is shown in Figs. 2-7. Reference numeral 82 is indicated on both Figs. 2 and 4. Since the drawing objection was linked to claim 11, the Examiner is reminded that claim 11 has been cancelled herewith. By virtue of the foregoing explanation, the drawings are not believed to be objectionable and withdrawal of the Examiner's objection is courteously solicited.

The objections to the specification, as they pertain to the retained or new claims, have been attended to so that further objections to the specification is not anticipated.

Further, the claim rejections on pages 4 and 5 have been considered and have been addressed for those claims remaining in the application.

The previously submitted claims were rejected under 35 U.S.C. § 102 as being anticipated by Schott (4,616,952) and under 35 U.S.C. § 103 as being unpatentable over Schott in view of DePew (3,233,496).

Application No.: 10/003,248

Docket No.: 21065-00160-US

Schott discloses a coupling device for axially coupling a sleeve 1 to a shaft 10. The shaft 10 is not at all a "locking piston" but one of the pieces to be assembled.

In Schott, the locking means is the ring 3 which is maintained by the spring 2, and which pushes the balls 5 radially outward the axis, to lock the shaft 10. The sleeve 4 is used to push axially onto the ring 3, they allow the balls to move radially toward the periphery and unlock the shaft 10.

In Schott, the balls, pushed and maintained inwardly by the ring 3, lock the shaft 10. In the invention, the balls pushed and maintained outwardly by the piston lock the second part with respect to the body.

In DePew, an essential difference is that the pin 32 is not maintained in the locked position by the balls, but by the spring 47. In the invention, there is no such spring.

Accordingly, it is applicant's position that the current claims set forth distinguishing characteristics that are not fully met under 35 U.S.C. § 102. Further, the cited references do not provide a necessary teaching or suggestion that all of the individual parts could be combined as set forth in the claims. Accordingly, the combined references do not provide a *prima facie* case of obviousness. Therefore, all of the claims currently in the application are now believed to be allowable.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

In view of the above, consideration and allowance are, therefore, respectfully solicited.

In the event the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

Application No.: 10/003,248

Docket No.: 21065-00160-US

The Director is hereby authorized to charge any fees, or credit any overpayment, associated with this communication, including any extension fees, to CBLH Deposit Account No. 22-0185.

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Respectfully submitted,

By 

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Application No.: 10/003,248

Docket No.: 21065-00160-US

VERSION WITH MARKINGS TO SHOW CHANGES MADE**IN THE SPECIFICATION***Please amend the specification as follows:**Please replace the paragraph on page 3, line 18, with the following amended paragraph:*

The use of these systems can therefore be justified for removable or at least tilting seats, where the attaching system must be readily released in order to ~~manoeuvre~~ maneuver the seat. But these systems are too sophisticated and therefore too costly for seats which are not intended to be removed or separated from the floor other than for exceptional maintenance operations.

Please replace the paragraph starting on page 10, line 21 and continuing onto page 11, line 1, with the following amended paragraph:

A piston 20 is inserted into the bore 13 of the body. It features a rod 21 that protrudes from the top end of the body and a head 22 whose larger diameter is roughly equal to that of the cylindrical bore 13. The piston head 22 has an upper tapered section 23, whose smaller diameter face meets the rod 21, and has its larger diameter base 24 on the side away from the rod, that is to say towards the bottom as illustrated on the drawings. On the other side of the tapered section 23 with respect to the larger diameter zone 24, the piston head features a toroidal zone 25 at a lower end section-25 whose surface forms a portion of a torus such that when viewed in cross-section, it forms an arc of a circle with a radius roughly equal to that of the balls. This lower end section moreover forms an end shoulder 26 with a larger diameter than that of the most recessed part of the toroidal zone 25.

Please replace the paragraph beginning at page 11, line 21, with the following amended paragraph:

Application No.: 10/003,248

Docket No.: 21065-00160-US

The installation tool 30 typically consists of a tool body 31 in which is placed a sliding anvil 32 that is held pressed against an upper surface 33 by a spring 34. A lower surface 35 of the tool body features a ~~centre~~centering bush 36 of appropriate size to ~~centre~~center itself in the top end of the bore 13, the ~~centre~~centered bush forming an opening 37 in which the piston rod 27 can penetrate until its top end 28 is situated beneath the anvil 32. In addition, the anvil includes a striking head 38 which protrudes above the tool body, designed to be struck by a hammer or a pneumatic striking tool, not illustrated.

Please replace the paragraph beginning at page 15, line 3, with the following amended paragraph:

In the variant shown in figure 7, the body of the device is held on the first part made up, for example, by the rail element 5, by elbowed lugs 51 joined to the surface 55 by welds 52, with one wing 53 of the lug overlapping the top of the flange 12. The device is thus held firmly on part 5 prior to assembly, thanks to slight pre-stressing of the tapered washer, but nevertheless with the possibility of adapting its position by lateral sliding during assembly to allow the body of lock 10 to enter the hole 8 in the floor without difficulty, and to ~~centre~~center itself automatically.

Please replace the paragraph beginning at page 15, line 20, with the following amended paragraph:

Furthermore, in the example described above, the space between the lock body 10 and the edge of the hole 7 is used to accommodate the snap ring 17 when it is retained by the floor reinforcement 9. In the case where the holes in the two parts to assemble could be easily aligned, or even to use the lock body as a hole ~~centre~~centering device, the two holes could also be drilled to the same diameter, and the upper part of the body and the flange could be designed so that the snap ring 17 can abut and be retained above the surface of the first part without being detrimental to the thrust, spring return and

Application No.: 10/003,248

Docket No.: 21065-00160-US

clearance take-up function of the tapered washer, or any other component capable of fulfilling these functions.

IN THE CLAIMS

Kindly amend claims 1 and 3-6; cancel claims 7-11; and add claims 12-22 as follows:

1. (Amended) System for assembling a first part (5) to a second part (2, 9) by means of a ball anchoring device featuring a basically cylindrical lock body (10) comprising a central bore (13) and an annular wall (14) featuring radial holes (15) to accommodate radially mobile balls (16), and a locking piston (20) that slides axially within the body bore between a released position and a locked position where a piston head (22) keeps the balls pressed outwards and protruding from ~~the~~ a surface of the body, the two parts featuring surfaces that are applied against each other,

characterized in that the lock body (10) is inserted into a first hole (7) made in the surface of the first part and into a second hole (8) made in the surface of the second part, the two holes being more or less coaxial, the lock body features a flange (12) bearing against the free surface of the first part around the first hole through a spring thrust element (18), and the balls (16) are maintained partly protruding under ~~the~~ a free surface (82) of the second part, ~~on the one hand~~ in angular contact with the edge (81) of the second hole (8) opening into ~~the said free face~~ surface of the second part, and ~~on the other hand~~ bearing against a lateral retaining surface (23) of the piston head (22), ~~the said lateral retaining surface displaying in the~~ an area of contact of each ball a gradient such that under the effect of ~~the~~ an axial thrust applied to the balls by the body through the load applied to the flange (12) by the spring thrust element (18), the contact of each ball on ~~the said lateral surface~~ maintains the piston (20) in the locked position.

Application No.: 10/003,248

Docket No.: 21065-00160-US

3. (Amended) Assembly system in accordance with claim 1, characterized in that ~~it~~ the system features a snap ring (17) that encircles the body, ~~the~~ said snap ring being designed to maintain the balls (16) in a retracted position in the holes in the body before the body is inserted into the holes in the parts to assemble and when the piston (20) is in the released position, and where the diameter of at least one of the holes (7, 8) is smaller than the outside diameter of the snap ring (17).

4. (Amended) Assembly system in accordance with claim 1, characterized in that the body (10) joined to the first part (5) by one or more lugs (51) attached to the first part and holding the flange (12), and the spring thrust element (18) gripped between ~~the said lug(s)~~ one or more lugs and the surface (55) of the first part.

5. (Amended) Assembly system in accordance with claim 1, characterized in that the piston (20) features a rod (21) whose ~~far upper~~ end (28) opposite to the piston head protrudes beyond the body and features a means ~~of for~~ gripping (29) on which a release tool (40) can be fitted to move the piston out of ~~its~~ the locking position.

6. (Amended) Assembly system in accordance with claim 3, characterized in that ~~the~~ a tip of the piston head (22) beyond the lateral retaining surface has a toroidal zone recess (25) that accommodates the balls (16) when ~~they~~ the balls are held in the retracted position by the snap ring (17), ~~the said~~ recess featuring a far edge (26) that turns outwards towards ~~the~~ a periphery and, by axially abutting on the ~~said~~ balls in the retracted position, prevents the piston from coming out of the body.

New claims 12-22 have been added herein.